What is claimed is:

1. A producing method of a CMOS image sensor, comprising the steps of:

forming a photodiode and a MOS transistor within a well formed over a common substrate;

forming an antireflection film over the photodiode; and

forming an insulating layer over the antireflection film and the MOS transistor, wherein the step of forming the antireflection film includes the steps of:

forming a first insulating film over the surface of the photodiode and the surface of a gate electrode constituting the MOS transistor;

forming a second insulating film over the surface of the first insulating film such that the second insulating film is thicker than the first insulating film; and

forming sidewalls at the sides of the gate electrode by anisotropically etching the stacked first insulating film and second insulating film.

2. The producing method of a CMOS image sensor according to Claim 1, wherein the step of forming the antireflection film two or more times carries out the steps of:

forming an oxide film serving as the first insulating film over the surface of the photodiode and the surface of the gate electrode constituting the MOS transistor; and

forming a nitride film serving as the second insulating film over the surface of the oxide film, to thereby form the antireflection film formed of a plurality of oxide films and nitride films that are alternately deposited, film by film, over

the photo transistor.

3. The producing method of a CMOS image sensor according to Claim 2, wherein the step of forming the antireflection film comprises the steps of:

forming sidewalls at the sides of the gate electrode constituting the MOS transistor by anisotropically etching the stacked oxide films and nitride films, and then forming an oxide film over the surfaces of the MOS transistor having the sidewalls and the nitride film; and

forming a nitride film over the oxide film.

4. The producing method of a CMOS image sensor according to Claim 1, comprising the steps of:

anisotropically etching the first insulating film and the second insulating film, to thereby form a sidewall at the side of the gate electrode, and then forming an insulating layer;

high-selectively dry-etching the insulating layer; and

low-selectively dry-etching the insulating layer, wherein the producing method of a CMOS image sensor forms a contact hole passing through the insulating layer, located along the external wall of the sidewall.